

Title (en)
Toggle-lever clamping device for clamping work pieces with self-compensation

Title (de)
Kniehebelspannvorrichtung zum Spannen von Werkstücken mit Selbstkompensation

Title (fr)
Dispositif de serrage à genouillère pour le serrage de pièces à autocompensation

Publication
EP 1500470 A1 20050126 (EN)

Application
EP 04015136 A 20040628

Priority
IT MI20031519 A 20030724

Abstract (en)
A toggle-lever clamping device for clamping work pieces; the device comprises a box-shaped body (10) which supports a clamping member (11) movable between a forward disengaging position and a backward position for clamping the work piece (P). The device also comprises control means (15) operatively connected to the clamping member (11) by means of an intermediate toggle-lever connecting link (18), and an articulated quadrilateral system (20, 23, 11B); the intermediate connecting link (18) is in the form of an axially yieldable flat spring comprising a plurality of side by side arranged elastically yieldable spring sections (18'), aligned according to its longitudinal axis. The articulated quadrilateral system (20, 23, 11B) and the intermediate connecting link (18) are constructed and disposed in such a way as to maintain an irreversible locking condition of the clamping member (11) to clamp work pieces (P), compensating differences in thickness of the work pieces (P). <IMAGE>

IPC 1-7

B25B 5/12

IPC 8 full level

B25B 5/00 (2006.01); **B25B 5/06** (2006.01); **B25B 5/12** (2006.01); **B25B 5/16** (2006.01)

CPC (source: EP KR US)

B23Q 3/06 (2013.01 - US); **B23Q 3/082** (2013.01 - EP); **B23Q 11/08** (2013.01 - US); **B25B 5/06** (2013.01 - KR); **B25B 5/12** (2013.01 - KR); **B25B 5/122** (2013.01 - EP US); **B25B 5/16** (2013.01 - EP KR US); **B23Q 2240/002** (2013.01 - EP)

Citation (search report)

- [E] EP 1447174 A2 20040818 - UNIVER SPA [IT]
- [PX] EP 1393861 A2 20040303 - MIGLIORI LUCIANO [IT]
- [DYA] DE 3936396 C1 19910425
- [Y] EP 1250984 A1 20021023 - MIGLIORI LUCIANO [IT]
- [A] US 5676357 A 19971014 - HORN EDWARD R [US]
- [A] FR 2675417 A1 19921023 - EQUIP SPECIAUX ET [FR]
- [A] DE 8913386 U1 19910314

Cited by

JP2009172684A; CN105538189A; CN107470824A; EP3412410A1; IT201700062835A1; EP3095558A1; EP3632620A1; CN110980254A; US11103977B2; WO2019098099A1; TWI682828B

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PL PT RO SE SI SK TR

DOCDB simple family (publication)

EP 1500470 A1 20050126; BR PI0403041 A 20050531; CA 2472843 A1 20050124; IT MI20031519 A1 20050125; JP 3106769 U 20050120; KR 20050012129 A 20050131; MX PA04007168 A 20050607; US 2005017424 A1 20050127; US 6976671 B2 20051220

DOCDB simple family (application)

EP 04015136 A 20040628; BR PI0403041 A 20040720; CA 2472843 A 20040702; IT MI20031519 A 20030724; JP 2004004368 U 20040723; KR 20040053235 A 20040709; MX PA04007168 A 20040723; US 87909904 A 20040630